General Practitioner use of online resources during medical visits: Managing the boundary between inside and outside the clinic

In an increasingly connected world information about health can be exchanged at any time, in any location or direction, and is no longer dominated by traditional authoritative sources. We consider the ways information and advice given in consultations by doctors transcends the boundary between the clinic and the home. We explore how information that is widely accessible outside of the consultation is transformed by General Practitioners (GPs) into a medical offering. Data comprise 18 consultations identified from 144 consultations between unselected patients and five GPs. We use conversation analytic methods to explore four ways in which GPs used online resources; (i) to check information; (ii) as an explanatory tool; (iii) to provide information for patients for outside the consultation (iv) to signpost further explanation and self-help. We demonstrate the interactional delicacy with which resources from the internet are introduced and discussed, developing and extending Nettleton's (2004) idea of 'e-scaped medicine' to argue that internet resources may be 'recaptured' by GPs, with information transformed and translated into a medical offering so as to maintain the asymmetry between patients and practitioners necessary for the successful functioning of medical practice.

Nettleton, S. (2004) The Emergence of E-Scaped Medicine? *Sociology*, 38, 4, 661–679

Main body of paper 7739, plus 250 for figure = **7989**

Use of information from the internet by General Practitioners: Managing the boundary between inside and outside the clinic

We live in an increasingly connected world. The percentage of the population using the internet between 2006 and 2016 was 82% in high income countries, 55% in upper middle income countries, 29.9% in lower middle income countries and 12.5% in low income countries (World Bank Group 2017). In the UK, 90% of UK households have internet access, with 53% of people over the age of 16 reporting looking for health related information (Office for National Statistics 2017). Increasing pressure in terms of demand for health services has led to a growing focus on mobilising self-management, part of which can be seen in the pursuit of a 'digital first' strategy promoting use of digital resources to protect and improve health (c.f. Public Health England 2017).

In 2004 Nettleton argued that medical knowledge has 'escaped' from the medical establishment "into the networks of contemporary info-scapes where it can be accessed, assessed and reappropriated" (Nettleton 2004: 674). The internet enables the exchange of information about health at any time, and in any location or direction, with people able to access information as well as upload their own content and comment on posts by others (Ziebland and Wyke 2012, Tan and Goonawardene 2017). A surge in layperson broadcasting of experiential knowledge, coupled with increased patient access to medically and non-medically sanctioned online information on health and illness, means the medical profession is facing a potential challenge to its legitimacy (Hardey 1999, Naghieha and Parvizi 2016).

Interest in how patients manage the movement and translation of health information found on the internet into consultations is ever increasing (Seguin and Stevenson in press). Research indicates that patients do not fully disclose their use of online health information before consultations (Bowes

et al 2012, Stevenson et al 2007, Hardey 1999). The Chair of the Royal College of General Practitioners, Professor Stokes-Lampard, commented that 'Dr Google' appears in 80% of her consultations, suggesting that most patients use the internet before consulting (Pulse Today 2017). Stokes-Lampard has encouraged the public to self-manage minor illness, for example using online resources and community pharmacists, in a bid to reduce GP attendance (MailOnline 2017, The Telegraph 2017). Despite some research interest in the perspective of General Practitioners (GPs) on patients introducing internet-derived health information in consultations (Allawalyah et al 2010), there has been much less consideration of how GPs manage the presentation of online health information to patients in the consultation. Much of the information GPs access via the internet is also readily available to patients, raising the question of how information and / or resources can be (re)presented by GPs to patients as a medical offering. This paper focuses on references to, or use of, the internet by GPs during consultations. Specifically, we are interested in how GPs negotiate using and directing patients to resources that are widely accessible via the internet whilst maintaining the position of provider of expert medical knowledge. We draw on the idea of transformation (Berg 1992, Harding and Taylor 1997) to argue that GPs seek to transform widely accessible material into something that is imbued with expertise through the process of explanation and interpretation during interactions.

Transformations

In his classic paper on medical disposal, Berg (1992) suggests that a patient's problem is solvable when the doctor is able to propose a limited set of actions which are perceived to be a sufficient answer (at this time and place) to the specific problem. Key to such disposal is the idea that data derived from the patient's reported symptom and the doctor's examination (as well as medical criteria and disposal options) are not 'givens' which unidirectionally lead the doctor towards a specific disposal. Rather, elements presented in the consultation are articulated and then actively re-constructed to fit a certain transformation. The patient's problem is not simply translated but is

remoulded through an active articulation of an array of heterogeneous elements in order to effect the transformation.

Harding and Taylor (1997) draw on this idea of transformation in relation to pharmaceutical expertise. They demonstrate how the provision of advice and selection of aspirin by pharmacists may invest even medicines regarded as familiar with additional value and status. They argue that:

> When aspirin is selected (from a range of alternative drugs) by an 'expert', sanctioned to interpret its appropriateness for a specific individual, this commonly available drug has the potential to be symbolically transformed into a medicine (Harding and Taylor 1997: 554).

The idea of transformation has also been used in relation to medical prescribing, suggesting that a prescription not only provides access to treatment but also possesses symbolic value which legitimises and transforms the presenting problem into a problem worthy of medical treatment (Pellegrino 1976).

In this paper we draw on the concept of transformation to consider how GPs transform information that is widely available outside of the consultation into a medical offering and how this is received by patients (and / or their companions).

Methods

The data originate from a large qualitative mixed methods study; **H**arnessing **R**esources from the **I**nternet (HaRI), in which use of the internet in consultations is a central concern (Seguin et al 2018). The data used in this paper came from five GPs working at three practices located in the South East of England. Practices varied in terms of level of deprivation. Four of the GPs were male, and GPs varied in terms of ethnicity. Two GPs were trainees, the others reported being registered for 19, 26 and 34 years respectively at the time of data collection. From 144 consultations we identified 18 consultations in which GPs used or referred to the internet.

In these 18 consultations, 12 of the patients were female and six were male. They ranged in age from under one (including babies with their carers) to over 65. Four patients were joined by companions during their consultation. The sample predominantly identified as White English, with a minority identifying as Asian. There was a relatively even split between patients who had attained a vocational qualification or higher and those with secondary level education or lower.

For the purposes of this paper we draw solely on video recordings of consecutive, (as far as possible subject to written informed consent), unselected consultations between GPs and patients. We viewed 144 video recordings to identify consultations which met at least one of the following criteria: (i) the GP used the internet during the consultation and the computer screen was clearly visible to the patient; (ii) the GP used the internet during the consultation and referred to it when discussing a problem with the patient (regardless of whether the patient saw the screen); and / or (iii) the GP recommended that the patient use the internet in relation to their health issue.

We employed conversation analysis (CA), a micro analytic approach to consider how actions are constructed and produced in interaction (Sidnell J. 2010, Barnes 2005, Drew et al 2001), to analyse our data. Following identification, consultations were viewed repeatedly, with specific sequences of interaction between patients (and companions, if applicable) and GPs, transcribed in detail according to the Jeffersonian transcription system (Jefferson 2004) to facilitate analysis of verbal and embodied interactions. A key to the notation used in the transcribed extracts presented is shown in figure 1.

[Insert Figure 1 here]

Ethical Approval was obtained from a local UK NHS Research Ethics Committee, with governance approval from the Health Research Authority. The data presented here have been anonymised for names and place names. In the extracts presented, GPs' contributions are marked as 'GP', Patients' as PT and companions as 'CM'.

Findings

The GPs in our sample generally used the website www.patient.co.uk to look up information either for themselves or to share with patients. The site describes itself as:

> the web's leading independent health platform, established for 20 years. With more than 18 million visits a month, it is a trusted source of information for both patients and health professionals across the globe. The site contains over 4000 health information leaflets and thousands of discussion forums. It is accredited by The Information Standard, NHS England's quality mark and was listed as 'The top health website you can't live without' by The Times newspaper (Jan 2013). (https://patient.info/about-us)

GPs also made use of the Google search engine which has a visually distinctive interface and is arguably easily recognised by patients (or companions) who use the internet.

In our sample there were four ways in which GPs used the internet; (i) to check information to support their practice; (ii) as a tool to explain to patients the reasoning for advice or diagnosis; (iii) to provide printed information about the presenting problem and / or signpost to further assistance outside of the consultation, such as helplines or exercises and; (iv) to signpost further explanations and self-help via a web link.

This paper focuses on instances in which it was evident that patients were aware that the GP was searching for information on the internet.

The consulting room

Before examining the data it is important to consider the layout of the rooms used by the GPs to consult and how this impacted on the potential for sharing resources from the internet. GP4 consulted in a room in which the computer screen could not easily be seen by patients. This limited the patients' awareness of what the GP was looking at, including whether he accessed the internet. The physical space and orientation of the furniture in the consulting rooms of the other GPs allowed

patients a view of the screen, and in some cases the GP also tilted the screen so patients had a better view.

(i) Internet used to check information to support practice

In the example below the patient presented with rectal bleeding. Following a physical examination, the patient and GP return to their seats and the GP suggests restarting a previously prescribed treatment for diverticulitis and initiating a new prescription for antibiotics. The GP initiated a search on the website patient.co.uk. Although it is clear that the patient is also looking at the screen, neither the GP nor the patient refer to the fact the GP is searching for information, and at no point is there an explanation either about the necessity for the search or the information being sought.

Extract 1

1	GP:	°↑let me just have a ↑quick ↑look,° ((brings up patient.co.uk on
2		the screen and scrolls down)) (6.4) can I ↑check your blood
3		pressure while I look,
4	PT:	((patient shifts gaze to raise her sleeve to have her blood
5		pressure taken))yeah and it ↑also ↑leaves a horrible taste you
6		↑know ↑in ↑my↑mou:th, (0.6) whether that's the:: (1.0) the
7		blood I really don't ↑kno:w, (0.8) ((looks back at the screen))
8		it's not nice
9		(4.8)
10	GP:	°°o::h°° (1.6) are you a↑llergic to any↑thing?
11	PT:	↑no:,
12	GP:	((switches back to patient record)))°okay° (0.6) .hhhhh (0.6)
13		kuh kuh ku:h ((doctor moves chair to take the blood pressure))
14	PT:	((patient looks at her arm as the blood pressure cuff is

15 readied))

GP1 R8

At the beginning of the extract the GP announces his intention to use the internet using the words 'just have a quick look' (line 1). The soft delivery and use of the words 'quick' and 'just' works to minimise the act of using the internet, suggesting clarification as opposed to a critical piece of information. The patient looks at the screen, only shifting her gaze when she readies herself to have her blood pressure taken following a request from the doctor (line 4) and shifting it back once she has pulled up her sleeve (line 7). Neither the doctor nor the patient refer to what the GP is looking at or what he is searching for. The patient's only interjection is to provide another symptom, a horrible taste in her mouth (lines 5-8). This is not taken up by the GP suggesting it is not relevant in that place in the consultation. The GP meanwhile shifts his gaze between the computer and the task of preparing to take the patient's blood pressure. He switches the screen back to the patient's medical record following verbal confirmation she is not allergic to anything. It is not possible to ascertain if the question about being allergic to anything related to what the doctor was looking at on the website.

Neither the GP nor the patient comment on what was viewed. The website has a clear banner saying 'patient', so the patient is likely to be aware the GP is using a website accessible to patients, yet neither the patient nor the GP appear to orientate to the website as anything other than a 'medical' resource.

(ii) Internet as a tool to support the reasoning for advice or diagnosis

Below, we present a number of examples in which GPs harnessed the internet as a communication tool to support explanations of medical problems and provide advice.

In the following example the patient attends to ask for a letter for his travel insurance company stating that it is safe for him to travel following a stroke. The GP uses the Google search engine and patient.co.uk to check for guidelines on the safety of travelling, specifically flying, after a stroke. The

patient and his companion can clearly see the screen, although the GP does not invite the patient to look at the screen and share in the interpretation of the information.

Extract 2

1	GP	°°Right let's have a look°° ((typing and clicking as he reads
2		information on the internet – patient.co.uk)) (38.9) right
3		↑what ↑they ↑sa:y is (0.4) ↑↑reasons ↑↑not to be allowed to,
4		trave:l (0.6)include a stroke within three da:ys (0.6↑) so
5		you're obviously clear of tha:t,
6		(4.6)
7	?PT	so it ↑should be all ↑right,((unclear who says this))
8		(3.6)((GP continues to look at the screen))
9	PT	yea:h I feel all right,

GP1 R1

Similarly to extract 1, the GP marks the fact he is going to look up information on the computer by saying 'right let's have a look' (line 1). This is said softly but marks the action, with the use of 'let's', as collaboratively seeking to address the patient's query. The GP makes clear his assessment on the safety of flying is based on the information he finds, reporting to the patient 'what they say is' (line 3). The website is presented by the GP as the source of information that will be used to provide a written medical assessment to a bureaucratic body. In this way information that is readily available to both the patient and the insurance company is transformed into evidence upon which to base a written medical opinion.

In the next example we see how images from the internet may be used to support explanations and advice. Images are particularly useful when the patient has a visible disorder such as a skin problem. Such images are readily available but may require medical knowledge to transform them into something understandable. In the following case the patient, who had previously been treated for skin cancer, presents with concerns about some moles which he thought had changed; a known indicator of skin cancer. The doctor examines the patient and explains the moles are harmless. He then shares images on the internet with the patient to support his assessment.

Extract 3

1	GP	This is (certainly?)not skin cancer I will show you the
2		picture so that you can see::((said as he examines the
3		patient with a magnifying glass which is then returned to a
4		drawer))
5		(22 lines omitted in which GP reassures patient he does not
6		have cancer using technical terms to list types of mole)
7	GP:	[th]at's a ↑typi↑ca:l o:ne (0.6) so ↑but at ↑ti::mes
8		it can become ↑thi:s (0.8) len↑tigo:: (2.8) and ↑you will see
9		the:, (.) len↑tigo magn) (.) [which is] =
10	PT:	[ri::ght,]
11	GP:	=a super↑ficia::l, (0.6) <ski:n cancer> a form of superficial
12		skin [cancer] that is not it ((GP shakes his head slightly as
13		he says this, patient leans forward and Dr moves screen
14		towards the patient))
15	PT:	[ri:ght]

GP2 R53

In lines 1-2 the GP informs the patient that the moles are not skin cancer. The GP then states his intention to show the patient some pictures to visually bolster this diagnosis. When the GP uses the computer the patient moves forward to see the screen which the doctor angles towards the patient

once he has located the images he wishes to share (lines 13-14). Notable in this extract is the GP's use of medical terminology throughout, punctuated by pointing at particular images on the screen. The patient produces continuers, all in overlap with the GP's talk (lines 10, 15), indicating engagement with what is being said and shown, however this cannot be taken to indicate understanding. The GP provides a translation of images which, although readily available using the Google search engine, here called upon medical expertise in order to respond to the patient's concerns.

In the next example we can see how the internet may be used to support and bolster a diagnosis. Following a physical examination, the GP suggested a diagnosis of phlebitis and shared the website patient.co.uk with the patient.

Extract 4

1	GP	°so° (0.4) ((turns screen towards patient and points at it)) redness
2		and tenderness along the vein with swe↑lling,
3	PT	hm ↑mm::,
4	GP	.hhhh ↑usually in the ↑greater saphenous ↑vei:n ((gestures towards
5		his thigh)) which is ↑just(0.4) just ↑slightly higher u:p and this
6		is the lower pa:rt of that vein ((returns hand to screen and
7		points))
8	PT	↑ri:ght,
9		(0.8)
10	GP	er I ↑don't think you've got cellu↑litis there's ↑nothing to
11		su↑ggest a deep vein thrombos↑is=
12	PT	=↑mm,
13	GP	or any of tho:se really ((moves hand down the screen as he says
14		this))
15	PT	ri:ght,

The GP turns the screen towards the patient and points at the relevant material, inviting her to view the screen by gesturing towards it. At the same time he verbally outlines the description on the site that fits with her symptoms and his physical examination (lines 1-4). He then moves to illustrate the patient's problem on his own body (lines 4-6), but following an acknowledgement from the patient in line 8, he once again points at the screen as he verbally lists and physically gestures towards the diagnoses he has discounted. In this way the internet is used as a primary resource as the GP translates the information on the webpage in order to provide evidence to bolster his diagnosis of the patient's problem via the exclusion of other possibilities.

In the following example the patient had ongoing health issues and one of her reasons for visiting the GP was to find out whether she should avoid contact with her grandson who had chickenpox. The GP uses the internet to check if this might be a problem. The patient comments on the information on the screen, uninvited, stating that she had tried looking up information on the same site (patient.co.uk) but couldn't understand it.

Extract 5

1	PT	I've read loa:ds on the:re I couldn't make head nor tail of
2		it in the ↑end, (0.6) does your 'ead in dunn↑it ↑ha:::::::h
3		↑ha ↑ha ↑ha ↑ha .hhhh and ↑p'raps ↑does ↑it ↑lead ↑to
4		↑shingle:::s a:::nd,
5	GP	no >the the< the ↑only person who can get ↑shingles from
6		chickenpox (.) is the person who's ↑had the chickenpox

This is the clearest example we have of both the GP and patient negotiating the boundary between inside and outside of the clinic. The patient navigates the moral dimension of what is deemed appropriate consulting by both patients and doctors (Llanwarne et al 2017), while the GP is faced with a situation in which the patient indicates they have already accessed the information the GP is using to address her query, leaving the GP needing to reassert his medical authority. Unlike the previous extracts, the GP does not announce his intention to use the internet, or look for further information, he just opens up the site on his computer. Uninvited, the patient indicates her recognition of the site and says she has already looked at the information but did not understand it. In this way the patient presents herself as a 'good' patient who has actively researched her query before 'bothering' the doctor. The patient's uninvited comments make clear she has access to the same, or similar, information to that being viewed by the GP. This presents a potential challenge to the expertise of the GP. The laughter in lines 2-3 may be attributed to the delicacy of raising the fact that the information being used by the GP is generally accessible, as well as orientating to the interactional delicacy of her suggestion of a lack of understanding (Holt 2012). Throughout, the patient carefully presents herself as less expert than the GP by indicating she could not understand the information she had read, while at the same time creating an opportunity to ask a question about whether contact with her grandson who has chickenpox could cause her to develop shingles. This provides an opportunity for the GP to reassert his authority as an expert by demonstrating his knowledge of the link between chicken pox and shingles (lines 5-6). It is important to note here the co-constructed nature of the interaction between the patient and the doctor, in particular that it is the patient's utterances in lines 3-4 about the possibility of shingles, left unfinished, that provides the GP with the opportunity to assert his medical expertise and his position of authority in the consultation.

Having considered how the internet was used by doctors in consultations to support medical explanations, diagnostic reasoning, and treatment advice, we now moves on to consider how

resources referred to, or discussed, which originate from the internet were transformed into medical resources for use outside of the consultation by virtue of being printed and given to patients.

(iii) Provision of printed information to take away and / or signposting of resources outside of the consultation

Here we consider examples in which the GP gave the patient printed versions of material from the internet.

The following extract is from a consultation in which the patient presented with pain in his wrist. Following a physical examination and diagnosis, the GP offers to find the patient a leaflet about the presenting problem and immediately turns to the computer to execute a search.

Extract 6

1	GP:	um I'll ↑try and see if I can find something for you a ↑leaflet,
2		(0.6) which (kinda) explains a bit more about this ((starts
3		searching on internet))

GP4R85

The GP uses the Google search engine to locate a fact sheet which includes anatomical diagrams. Although the GP does not invite the patient to share the screen, after 12 seconds the patient shifts forward in his seat and appears to be looking at the screen. After finishing his searching, rather than pointing to what was on the screen (as we saw in extracts 3 and 4), the GP demonstrates the likely cause of the pain using his own wrist.

The GP subsequently prints out the information and uses the printed version to illustrate his message. In summary, the GP uses the internet as a source of information similar to the previous examples, however also transforms the information from something that the patient could find

themselves via a web search to a printed version shared in the consultation and endorsed for use outside of the consultation. The action of providing a print-out may be seen as comparable to the 'gifting' involved in issuing a prescription for a medicine (Pellegrino 1976, Cooper 2011).

The next example is drawn from the same consultation as extract 4. Here, the GP offers the patient a print-out of information, noting the version they had viewed together was the medical article and the version he was printing for her to take away was the patient version.

Extract 7

1 GP: .hh what I could do: is ↑that that was the ↑medical a:rticle I
2 .↑could _[ve you] the, (0.4) this is the=
3 PT: [o:↑kay]
4 GP: =patient version,
5 PT: ↑oka:y (4.0)((GP scrolling through page)) ↑thank you:
6 (1.6)
7 GP: ↑°e:::r° (.) ↑usually page fou::r (0.6) yeah ↑that's just their
8 advertis↑ing,
9 PT: hm ↑mm::,
10 GP: and their disclaimer so if it's all right with you I won't print
11 th[at bit]
12 PT: [↑no::] no that's fi:ne

GP1R115

This is the only reference in our data to two versions of patient.co.uk; the information shared with the patient when discussing diagnostic reasoning (the medical version) and the information the GP offers to print out for the patient for use outside the consultation (the patient version) (lines 1-4). The reference to the page containing the advertising (line 7 -8) and the disclaimer (line 10) not only

demonstrates the GP's familiarity with patient.co.uk, but also works to distinguish the offering as a 'lay' resource. In this example the GP demonstrates his expertise in translating the 'medical' version for the purposes of diagnosis in the consultation but also establishes a demarcation between the information he accessed and used and the version of the information he gives to the patient for her use outside of the consultation. Crucially the GP asserts his authority over information sources across the boundary between home and the clinic.

In the following example the patient reported pain in his foot on walking and was given printed information as well as exercises to alleviate his symptoms.

Extract 8

```
1   GP:  ((GP takes print-out from printer, staples it and shows it to
2        the patient)) Thi this is (0.2), so although this talks about
3        Achilles tendon as well
4   PT:  Mmm
5   GP:  it is (.) for the plantar fascia
6   PT:  Mhm
7   GP:  erm um because of the link er explained there
8   PT:  Right yeah
9        (0.1)
10  GP:  ..hh so, (0.6) have a ↑read ↑throu::gh,
11  PT:  ↑yeah [I will]
12  GP:        [have a] go at the exer↑cises and [hopef]ully (.)=
13  PT:                                          [yeah,]
14  GP:  =it will settle down for [you]
15  PT:                           [↑lo]vely (0.4) ↑thank you very
16       mu[ch]
```

The print-out provides information about the problem and self-help resource in the form of exercises. The exercises are not demonstrated in the consultation however the doctor imbues them with the authority of medical treatment (lines 12-14), and the patient responds with an appreciation marking this as unproblematic.

A similar scenario was played out in a different consultation (not shown here) in which the GP alluded to the normality of providing printed information about anxiety, stating the resources were bookmarked on his computer for ease of access. In that consultation the GP provided a print off outlining self-referral to counselling and / or exercises providing another example of resources from the internet being transformed into treatment recommendations imbued with medical authority.

The patient in the following extract came to see the GP after suffering a panic attack the previous night and being taken to hospital. On her discharge from Accident and Emergency it had been suggested she visited her GP for a follow up. The GP, as in the previous examples, provides the patient with a print out of information and breathing exercises to address her anxiety. In contrast, however, the patient (and her companion) resist this recommendation and present Kalms (a herbal remedy for anxiety) as an alternative, attributing the suggestion to an unnamed person at the hospital.

Extract 9

1	GP:	so ↑what ↑what ↑what we'd normally do is give you so:me,
2		(0.4).tch (0.6) some ↑tips (.) ↑to:::: (0.4) ↑teach
3		yourself some calming breathing making muscles relax
4	PT:	yeah,
5	GP:	and then there's ↑also::, (0.6) do ↑either of you u- use
6		comput- the com↑puter?
7	PT:	[no:]

CM: [no:]

GP: °okay° .hh (0.4) ↑u:::m, hhhh

(0.8)

((34 lines omitted where the companion talks about the patient's recent health problems and whether it is alright to go on a planned holiday))

GP: ((prints off documents and goes through it with the patient illustrating what he is saying by pointing to the relevant part on the paper)) right ↑the::se, (0.4) so a lot of this is computer based but there is a phone number as well if you (0.6) this is ↑ou::r (.)en aitch ess (NHS) ↑counselling service ↑loca↑lly,

PT: ↑yea:h

GP: u::m if you ↑ca::n or ↑have ↑got access >to a< computer these are very ↑good, (0.6) but if not don't ↑worry,

PT: ↑yea:h

GP: ↑that's ↑↑tha::t ((hands a page to the patient and looks at the next page))(0.4) and then this is some written information about relaxation. (0.6) so you can do some ↑breathing exercises and you can do some muscle exercises

PT: cises yeah (0.2)yeah

GP ((moves away to staple pages))

CM: ↑wha- (.) what about the:: (.) th- the kalms would ↑the::y ↑ be ↑any ↑↑good ↑o::r (.) just in case she feels (satisfied) with that ↓o:r

GP1R7

The GP introduces the idea of relaxation techniques to help prevent, or at least control, any further panic attacks. This is met with a minimal response from the patient in line 4. The possibility of using a computer to access resources is then raised by the GP but is immediately closed down by both the patient and her companion who, when asked if they use a computer, produce a definitive 'no' response (lines 7 –8) in overlap with each other. The GP pursues the suggestion of relaxation exercises (line 10) and having printed off information from the internet, goes through it with the patient. This receives relatively minimal acknowledgement from the patient (lines 18, 21, 26). The patient, and her companion, appeared to be seeking a different course of action, namely Kalms tablets. The doctor moving to staple the pages (line 27) provides a slot for the question about the use of Kalms to be raised again. Kalms was raised as an option by the patient after she had presented her problem and prior to examination (not shown here) and received minimal uptake from the GP. The re-introduction of Kalms, as the doctor moves to give the patient the print out of information can be seen as a, (at least partial), rejection of the relaxation techniques and information provided by the GP. Moreover, the fact the print out originated from the internet, a resource the patient categorically stated neither her or her companion had access to, and that the GP refers to aspects of the information provided which are compromised through lack of internet access (lines 14, 19-20), weakens the print out as a viable solution for the patient.

Having discussed the provision of printed information from the internet we now consider examples in which links to websites were given to patients to access medical resources outside of the consultation.

(iv) Signposting via a web link to further explanation and support.

One of the five GPs did not access the internet in the consultation, but he did provide patients with web addresses for use outside of the consultation. In the following example the patient is diagnosed with golfer's elbow. At five and again at eight minutes in to the ten and a half minute consultation

the GP offers a web link to more information about the problem. When the GP gives the patient a prescription at the end of the consultation the patient appears unsure of what to do next.

Extract 10

GP: ((GP shows the patient the prescription and points to the information on it with his pen))so ↑that's the anti inflammator↑ie::s,

PT: ↑yea:h

GP: ↑that's the websi:te >it's just< ↑patient dot co dot yew ↑ka:y, (0.4) >it's called< ↑golfer's elbo:w,

PT: Yeah

GP: the ↑technical name is medial epicondylitis but, (.) >if you put< golfer's elbow in it will tell you all about it ((gives patient the prescription script))

PT: thank ↑you:,

GP: ↑all ↑right,

PT: what do I do ↑with ↑↑thi:s?((looking at the script))

GP: ↑u:m, ((takes the script and turns it over and points to the drug prescription)) (0.4) take ↑any::, (0.4) take that to ↑any: (.)chem↑i:st,

PT: ye[ah,]

GP: [the]y'll have ↑i:t, ((Turns script over))(.) and just ↑tea:r that bit off and >keep it with you<

PT: thanks a ↑lot

GP: ↑all ↑right

PT: thank you

GP: no problem

Following an appreciation in line 11, the patient looks at the prescription he has been given and asks what he should do with it. We can tell the patient is looking at the website written on the blank side of the prescription script as the GP turns the prescription over and then instructs the patient on how to get the prescription filled. The patient's difficulty appears to arise because the website address and details of what to search for are written on the same piece of paper as the prescription for anti-inflammatories. The patient appears unclear how to collect the prescribed medication without giving away the website address and search details written on the prescription script. The GP tells the patient to detach the side with the website written on it and keep it. This last phrase was delivered rapidly, potentially reducing comprehensibility (line 15). This exchange also makes noticeable that although the GP raises the topic of a website on two occasions before the interaction shown the GP does not make it clear what supplementary information the patient should be looking for from the website. This transfer of explanatory work from the clinic to the home did not involve physically seeing or receiving any resources, and as such it remains unclear what information the patient may access as a consequence of the consultation.

In the following extract we see how a direction to a website to support the GP's assessment of a no problem diagnosis received minimal uptake. The consultation concerns a mother who thought her child was developing a curvature of the spine and wanted a referral to a specialist. On physical examination the GP finds no indication of a problem. The mother does not accept this assessment and the GP suggests the mother accesses information on the internet as further support for the professional assessment.

Extract 11

1	DR:	they ↑won't do anything with i:t (0.8) there's ↑a: (.)
2		↑websi:te tha:t (.) can >tell you a little bit< a↑bou:t ↑it
3		(0.6) I can ↑give ↑you::
4	CM:	↑hm ↑hm:

5 DR: patient dot co dot yew ka:y but, (0.4) ↑that's ↑mi[:ld]

6 CM: [but] ↑even

7 like any ↑exer>↑cise you know< like something she could £↑do:£

8 ↑↑huh (0.4)it's ↑ho::w ↑the ↑se::lf (0.4) to he[lp thi:s]

GP5144

The mother displays resistance to the 'no problem' diagnosis, with minimal uptake to the refusal to refer and suggestion of a website to provide more information (line 4) and continues to seek a more limited medical intervention by asking about exercises (lines 6-8). In this situation resources on the internet, especially as they are referred to rather than demonstrated, are easily dismissed.

Discussion

This paper explored 18 consultations in which the GP used or referred to the internet. We identified four ways in which GPs used the internet in consultations; (i) to check information (ii) as an explanatory tool (iii) to provide resources for patients to use outside of the consultation and (iv) to signpost explanations and self-help. Using conversation analytic methods we based our observations on recordings and detailed transcripts of routine consultations allowing us to analyse practice-in-action as opposed to accounts of practice. Using video data meant we were able to consider the physical layout of the consulting room, in particular the positioning of the GPs' computer screen and the extent to which patients had a view of the screen.

Information from the internet appears to be situated somewhere between medical and 'lay' knowledge and as such invoking the internet as a medical resource may be seen to transcend the boundary between the clinic and the home. Our detailed analysis of data provided example of how this is achieved in practice.

We argue that the internet may be co-opted by GPs and employed as a medical resource. For example, the internet was invoked as a resource upon which to base medically authoritative correspondence in the example of the letter to an insurance company to state a patient was fit to fly. The internet was also utilised to explain diagnoses and deliver self-help resources, such as exercises, either in printed form or as a web link. Information from the internet was discussed in consultations, as well as provided for use outside. In this way we suggest that in addition to 'e-scaped medicine' as described by Nettleton (2004), resources from the internet are 'recaptured' by GPs to facilitate their work. Information and exercises may be transformed from something patients could access without medical support into a medically sanctioned resource.

The idea of GPs 'recapturing' resources from the internet purports that instead of health resources that have 'e-scaped' the control of the medical profession creating a challenge to the legitimacy of the medical profession GPs are using these resources to maintain the legitimacy of their position as experts by reframing resources from the internet designed as a substitute for medical consultations and imbuing them with medical expertise. Thus an unintended consequence of the development of internet resources to support health outside of the consultation may be time spent by GPs in consultations referring patients to, and using, these resources.

Transforming resources from the internet into a medically sanctioned resource is not necessarily straightforward. Heritage and Stivers (1999) distinguished online explanation and online commentary to describe instances in which doctors describe what they are doing and what they are seeing, feeling or hearing during a physical examination of a patient. They argue that the latter may be used to pre-empt patient resistance to a 'no problem' diagnosis. In our data online explanations and online commentary were used to introduce use of the internet (extracts 1, 2, 6), explain the reasoning for a decision (extract 2), diagnosis (extracts 3, 4) and treatment (extract 9). We argue that initiating use of the internet in this way presents this use as medically legitimate, particularly

when use is presented as collaborative through the use of phrases such as 'let's have a look' (extract 2) or moves to share the screen (extract 3, 4). Conversely, naming as opposed to showing resources on the internet, as was the case in extracts 10 and 11, reduces the opportunity for full endorsement enabled through physically viewing a resource together, arguably making it easier to miss or dismiss, particularly given what is already known concerning the difficulty patients have remembering information given in consultations (c.f. Kessels 2003).

Extract 5 makes clear the interactional delicacy of using a resource that patients could, or indeed may have, accessed. In this case the accountability associated with use of the internet by both the patient and the GP was demonstrated. Although the GP did not announce his intention to access a website the patient recognised the site (patient.co.uk). In response to use by the GP of a website that is accessible to patients, the patient sought to account for her visit and the 'doctorability' (Heritage and Maynard 2006) of her query by reporting that she had tried to resolve her query but could not understand what she read. She is however left with the dilemma of having identified the information the GP was using as generally accessible, potentially presenting a challenge to his authority as a medical expert. It is resolved here when she presents a further medical query which the doctor is able to answer using his medical knowledge, however this example clearly demonstrates the risks to the authority of the GP of using the internet in consultations. Awareness on the part of a GP of the potential challenge to their authority through the use of internet sites is particularly evident in extract 7 in which the GP notes he has shared the medical version of the website (patient.co.uk) with the patient but will give her the patient version to take home with her.

The arguments above all point to the importance of recognising the necessity of asymmetry in relation to knowledge and that both doctors and patients constitute and enact asymmetry throughout interactions in consultations (Pilnick and Dingwall 2011). Pilnick and Dingwall (2011) argued that asymmetry lies at the heart of the medical enterprise and is embedded within a wider

functionality of the institution of medicine in society as it is founded in what doctors are there for; namely to provide medical expertise to those in need.

Having mooted the idea of the successful 'recapturing' of resources previously described as having 'e-scaped' (Nettleton 2004), it is also important to consider what happens when resources from the internet are used to offer an option that the patient does not appear to want. In extract 9, reference to relaxation techniques accessible from the internet enabled the patient and her companion to dismiss the GP's offer by responding categorically in the negative about use of a computer. Thus the shift of medical resources on to the internet can be seen to open up an opportunity for resistance on the part of patients based on access to the internet. In the case cited here, it made it possible for the patient and her companion to return to their preferred option of Kalms tablets.

In conclusion, patients are increasingly encouraged to seek out information before consulting a GP. Previous work has reported patients' accounts of using information from the internet in this way (Bowes et al 2012). Here we argue that internet resources may be 'recaptured' by GPs. We have focused on the ways in which information available via a web search can be transformed and translated by GPs into a medical offering. We have demonstrated the interactional delicacy with which resources from the internet are both introduced and discussed so as to maintain the asymmetry between patients and practitioners that is seen as necessary for the successful functioning of medical practice.

References

Ahluwalia, S., Murray, E., Stevenson, F.A., Kerr, C. and Burns, J. (2010) 'A heartbeat moment': qualitative study of GP views of patients bringing health information from the internet to a consultation, *British Journal of General Practice,* 60, 88-94

Barnes, R.K. (2005) Making sense of qualitative research: Conversation analysis: a practical resource in the healthcare setting, *Medical Education,* 39, 113-115.

Berg, M., (1992) The construction of medical disposals. Medical sociology and medical problem solving in clinical practice, *Sociology of Health & Illness* 14, 151-180

Bowes, P., Stevenson, F., Ahluwalia, S. and Murray, E. (2012) 'I need her to be a doctor': patients' experiences of presenting health information from the internet in GP consultations, *British Journal of General Practice,* 62, 574-575

Cooper, R. (2011) In praise of the prescription: the symbolic and boundary object value of the traditional prescription in the electronic age, *Health Sociology Review,* 20, 462-474

Drew, P., Chatwin, J. and Collins, S. (2001) Conversation analysis: a method for research into interactions between patients and health-care professionals, *Health Expectations,* 4, 58-70

Hardey, M. (1999) Doctor in the house: the Internet as a source of lay health knowledge and the challenge to expertise, Sociology of Health & Illness, 21, 820–835.

Harding, G., and Taylor, K. (1997) Responding to change: the case of community pharmacy in Great Britain, Sociology of Health and Illness, 19, 547-560

Heritage, J., and Stivers, T. (1999) Online commentary in acute medical visits: a method of shaping patient expectations, Social Science and Medicine, 49, 1501-1517

Heritage, J and Maynard, D. (2006) *Communication in Medical Care: Interaction between Primary Care Physicians and Patients*, Cambridge: Cambridge University Press

Holt, E. (2013) Conversation Analysis and Laughter. In *The Encyclopedia of Applied Linguistics,* Blackwell Publishing

Jefferson, G. (2004) Glossary of transcript symbols with an Introduction. In Lerner, G.H. (ed.) *Conversation Analysis: Studies from the First Generation*. Philadelphia: John Benjamins.

Kessels, R. (2003) Patients' memory for medical information, *Journal of the Royal Society of Medicine*, 96, 219-222

Llanwarne, N., Newbould, J., Burt, J., Campbell, J. L., and Roland, M. (2017). Wasting the doctor's time? A video-elicitation interview study with patients in primary care, *Social Science & Medicine 176*, 113–122.

Mail Online (2017) http://www.dailymail.co.uk/health/article-5219409/Leading-doctor-says-think-going-GP.html (Accessed January 2018)

Naghieha, A. and Parvizi, M. (2016) Exercising soft closure on lay health knowledge? Harnessing the declining power of the medical profession to improve online health information, *Social Theory and Health,* 14, 332-350.

Nettleton, S. (2004) The Emergence of E-Scaped Medicine? *Sociology,* 38, 4, 661–679.

Office for National Statistics (2017) https://www.ons.gov.uk/peoplepopulationandcommunity/householdcharacteristics/homeinternetandsocialmediausage/datasets/internetaccesshouseholdsandindividualsreferencetables (Accessed January 2018)

Pellegrino, E.D. (1976) Prescribing and drug ingestion symbols and substances, *The Annals of Pharmacotherapy* 10, 624-630.

Pilnick, A. and Dingwall, R. (2011) On the remarkable persistence of asymmetry in doctor/patient interaction: A critical review, *Social Science and Medicine*, 72, 1374-1382.

Public Health England (2017) Digital-first public health: Public Health England's digital strategy **https://www.gov.uk/government/publications/digital-first-public-health/digital-first-public-health-public-health-englands-digital-strategy** (Accessed January 2018.

Pulse Today (2017) http://www.pulsetoday.co.uk/your-practice/practice-topics/it/dr-google-enters-80-of-my-consultations-warns-rcgp-chair/20035400.article (Accessed January 2018)

Sidnell, J. (2010) Conversation analysis: An introduction. Oxford: Wiley-Blackwell

Seguin, M., Hall L, Atherton, H., Barnes, R., Leydon, G., Murray, E., Pope C., Ziebland, S. and Stevenson, F. (2018) Protocol paper for the 'Harnessing resources from the internet to maximise outcomes from GP consultations (HaRI)' study: a mixed qualitative methods study, *BMJ Open,* 8, e024188. https://bmjopen.bmj.com/content/8/8/e024188.info

Seguin M, Stevenson F (In press) Patient engagement in treatment in an information age. Hadler A, Sutton S and Osterberg L (Eds) The Wiley Handbook of Treatment Engagement

Stevenson, F. Kerr, C. Murray, E. and Nazareth, I. (2007) Information from the Internet and the doctor-patient relationship: the patient perspective - a qualitative study. *BMC Family Practice,* 8, 1,47.

The Telegraph (2017) http://www.telegraph.co.uk/news/2017/12/29/royal-college-gps-recommends-dr-google-first-time-bid-ease-pressure/ (Accessed January 2018)

Tan, S.S.L. and Goonawardene, N. (2017) Internet health information seeking and the patient-physician relationship: A systematic review, *Journal of Medical Internet Research,* 19, 1: e9

World Bank Group (2017) World Development Indictors http://wdi.worldbank.org/table/5.12

Ziebland, S. and Wyke, S. (2012) Health and illness in a connected world: how might sharing experiences on the internet affect people's health? *Milbank Quarterly*, 90, 2, 219-49.

Acknowledgements

The authors would like to acknowledge the patients, GPs and practice staff who supported data collection, Professor Trish Greenhalgh who was a co-applicant on the original grant, the patient and public involvement representatives, Jon Benford and Charles Prince, as well as the helpful comments of the reviewers. The Harnessing Resources from the Internet (HaRI) project was funded by the National Institute for Health Research School of Primary Care Research. The views expressed are those of the authors and not necessarily those of the NIHR, the NHS or the Department of Health. NHS costs are covered via the Local Clinical Research Network. CP is part funded by NIHR CLAHRC Wessex.

Figure 1

Transcription symbols used in the analysis

:	Extended vocal sound. Multiple colons indicate further extension
(0.2)	Pause in tenths of a second
(.)	micro pause
> <	rapid speech
↑	Upward intonation
°°	quiet speech
,	continuing intonation
.hh	in breath
hh	out breath
=	latched talk
(( ))	text between double brackets gives descriptions of action or clarifications of phonetic meaning
_	Underling text used to denote forms of emphasis
( )	Single brackets used to indicate sections that were hard to hear or not hearable